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ABSTRACT

From a population of 117 adult residents of Elkland Borough formerly interviewed in August 1974, 72 cases were chosen. Of these, 57 persons (43 women and 14 men) were reinterviewed in March 1976 as to their behaviors, beliefs, and attitudes related to preventing cancer and coronary heart disease. The age and sex of those interviewed were compared to those of the actual population as reported in the 1970 population census. The age ratio of the sample was found to be very similar to that of the actual population. Each respondent was asked 117 questions pertaining to: the seriousness and susceptibility of the disease, early detection, their knowledge about the disease, high blood pressure, dietary and weight control practices, regular health maintenance practices, and medical services. Each person rated five selected diseases regarding their seriousness and susceptibility. Findings included: 76% regarded cancer and 81% regarded heart disease as serious enough to require changes in their present life; 25% felt they were likely to have heart disease; 36% believed they were likely to have cancer; 21% of those interviewed in 1976 could name 1 or none of the 7 cancer signs as compared to 29% in 1974; 54% of the women and 14% of the men reported never or occasionally observing dietary rules; and 41 persons named exercise and/or dieting as preventive health measures that they practiced. (NQ)

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PREVENTIVE HEALTH EDUCATION NEEDS
A SURVEY OF ADULTS IN ELKLAND BOROUGH,
TIOGA COUNTY, PENNSYLVANIA, 1976
AN INTERIM REPORT

by

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and

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Paper Number 10

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2

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INTRODUCTION

Americans spend a great deal of money as individuals each year in efforts to keep healthy. In the period from July 1, 1975 to June 30, 1976 this amount is estimated at 134 billion dollars or about $607 per person (Somers, 1976:92). Our magazines and newspapers frequently publish articles about illnesses and their treatment or prevention. The federal government's budget for health research in 1972 was 1.8 billion (Cooper, 1973:7).

Even though health in general is usually viewed as important, all health problems do not have equal importance over time. Through scientific discoveries and technological advances many causes of illness and death have been substantially reduced. One of the most dramatic instances of this in recent times is the use of vaccine for paralytic poliomyelitus prevention. The 1958 peak of 6,031 cases in the United States may be compared with only 40 cases reported a decade later (Langmuir, 1959; Hopkins, 1969). Similarly, the occurrence or seriousness of many other illnesses of an acute nature have been reduced.

Increasing attention is being given to illnesses of a chronic character such as cancer and coronary heart disease. These diseases now rank among the two most frequent causes of death or mortality in the general population of Pennsylvania (Natality and Mortality Statistics, 1973:v-vi). Further, using arteriosclerosis and hypertensive diseases as a means of estimating the economic costs of heart disease, a 1972 task force report estimates the direct annual cost of these illnesses at $4.3 billion (National Institutes of Health, 138).

For this study, these two most frequent causes of mortality are emphasized. Behaviors, beliefs, and attitudes related to preventing rather than treating these illnesses form the basis for this report.

SOURCE OF THE INFORMATION

From a population of 117 adult residents of Elkland Borough formerly interviewed in August 1974, as part of a health education needs survey, a purposive sample of 72 cases was chosen. Of these, 57 persons (43 women and 14 men) were reinterviewed in March, 1976.[1] The 57 residents selected represented 49 percent of those previously interviewed. The age and sex of those interviewed was compared to the age and sex characteristics of the actual population as reported in the 1970 population census. The age ratio of the sample was found to be very similar to that of the actual population. However, the sample population contained a larger percentage of women than the actual population. When using these results, this fact should be kept in mind.

During a face-to-face interview setting, each respondent was asked 117 questions. The interviewers recorded their responses which were later summarized using Penn State's computer facilities.[2]

RESULTS

Seriousness and Susceptibility

Each person rated five selected diseases regarding their seriousness and susceptibility. Seriousness was defined in terms of the respondents' personal situation. The individuals' judgement of susceptibility was made on the basis of their own experience, knowledge, and personal observations. Cancer was perceived to be the most serious of all five illnesses with heart disease ranking second (Table 1). The contrast between these two leading causes of mortality (rows 1 and 2) and colds (row 5) suggest that individuals' judgments of seriousness were reliable.

These judgments have remained relatively stable over the two years since the 1974 survey. In that survey, also, cancer and heart disease were judged to be the most serious diseases (among eight that were given).

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[1] References to the results of the 1974 survey will be made where appropriate.

[2] The Statistical Program for Social Sciences system (SPSS, version 6.02) was used (Nie,1974).

Table 1. Rating of Perceived Effect of Selected Diseases 1976 Eikland Borough Preventive Health Educational Needs Inventory (N=57)

Disease*	Degree of Changes Required					
	Major	Some	Uncertain	Few	None	Total
	(Read across for 100 percent)					
Cancer	63	13	16	4	4	100
Heart Disease	52	28	14	0	5	100
Glaucoma	34	42	13	3	8	100
Diabetes	12	59	12	10	7	100
Colds	6	8	9	30	47	100

*Not answering were 7, 1, 19, 6, and 4 persons, respectively, for each disease.

Further, the high percentage of respondents judging cancer and heart disease as serious enough to require changes in their present life (76 and 81 percent respectively) means that educational efforts may be directed at other dimensions of their prevention. People already believe these are serious; now, what should they do about them?

One's motivation to adopt recommended health practices is not based solely on perceptions of seriousness. Persons may ask,"But, what are my chances of getting sick with this disease?"

The data in Table 2 show that 25 percent of the respondents perceive themselves as either likely or very likely to have heart disease. A somewhat larger percentage, 36, believe themselves likely to have cancer.[3] In 1974 the comparative figure for heart disease was 40 percent and for cancer it was 38 percent. In 1976 those interviewed seem to feel they are as susceptible to cancer as they were in 1974, but they feel less susceptible to heart disease. This may be the result of recent reporting of a decline in the occurrence of heart disease nationally. At both points in time, however, the threat of one or the other of these two serious diseases is sufficiently high to suggest that a sizeable minority of the population studied may be ready to adopt recommended practices to prevent these diseases if they have not already done so.

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[3]This perceived rate may be compared with the national rate of actual occurrence of 25 percent (American Cancer Society, 3).

Table 2. Rating of Susceptibility to Selected Diseases 1976 Elkland Borough Preventive Health Educational Needs Inventory (N=57)

Disease*	Susceptibility Rating					
	Very Likely	Likely	Depends	Unlikely	Very Unlikely	Total
	(Read across for 100 percent)					
Common Cold	33	18	18	26	5	100
Diabetes	12	8	20	44	16	100
Cancer	8	28	17	42	5	100
Heart Disease	6	19	24	36	15	
Glaucoma	3	6	24	49	18	100

*Not answering were 2, 7, 21, 4 and 24 persons, respectively, by disease.

Early Detection and Knowledge About Cancer

Research on rates of occurrence of cancer and subsequent mortality has shown that "more people die of cancer which could have been cured or prevented than of cancer for which a cure has yet to be found"(American Cancer Society,4). Thus, it is important to know how useful persons feel early detection is in cancer treatment. Seventy-seven percent of those responding strongly agreed that some types of cancer detected in the early stages can be cured (Table 3). Only one person out of 57 disagreed.

Table 3. Opinion Rating about Statement: "Some types of cancer detected in the early stages can be cured." 1976 Elkland Borough Preventive Health Educational Needs Inventory (N=57)

Opinion	Percentage
Strongly Agree	77
Agree a Little	18
Depends	3
Disagree a Little	0
Strongly Disagree	2
Total	100

In contrast to the importance of early detection, however, were individuals' knowledge of the warning signals of cancer as suggested by the American Cancer Society (Table 4A). On the basis of immediate recall, 21 percent of those interviewed in 1976 could name either one or none of the seven signs. In 1974, 29 percent of those same persons could recall one or none of the signs; therefore, a small increase in knowledge has occurred. On one hand, educators may be encouraged by the high agreement over the value of early detection. On the other hand, current knowledge among this population still seems sufficiently low to suggest a continuing need for programs to acquaint persons with the warning signals.

Table 4A. Number of Cancer Signals Recalled
1976 Elkland Borough Preventive Health
Educational Needs Inventory (N=57)

Number of Cancer Signals Recalled	Percentage	
	1974	1976
None	17	10
1	12	11
2	19	7
3	31	12
4	19	25
5	2	14
6	0	11
7	0	10
Total	100	100
Average Correct Answers	2.3	3.7

Of specific interest may be signals associated with high rates of occurrence and cure. The estimated number of new cases of cancer per year for the breast and uterus sites are 40 percent of all cases. And, five-year cancer survival rates for these sites are 84 and 82 percent respectively (American Cancer Society, 8). The data in Table 4B show that the warning signals associated with these sites are known most commonly (rows 1 and 2).

Table 4B. Respondents' Knowledge of Seven Warning Signals by Individual Signals 1976 Elkland Borough Preventive Health Educational Needs Inventory (N=57)

Signal	Percent Recalling Warning Signal		
	Correct	Do Not Know	Total
Thickening of lump in breast or elsewhere	72	28	100
Unusual bleeding or discharge	61	39	100
A sore that does not heal	56	44	100
Change in bowel or bladder habits	53	47	100
Nagging cough or hoarseness	51	49	100
Obvious change in wart or mole	47	53	100
Indigestion or difficulty in swallowing	28	72	100

Given that cancer is the leading cause of death among women 30-54 (American Cancer Society,6), this study also asked the 43 women about a Pap test.* Two out of five women in this population reported having a Pap test in the past 15 months. This rate is similar to that reported by the same women in 1974. The frequency of this preventive health practice among these women is considerably lower than that found in a national sample of women aged 17 and over, 61 percent of whom had a Pap test in the year prior to being interviewed(Vital Statistics, 1975).

The results of other surveys in rural areas (see Rural Health Staff Papers 3-8) suggest that lack of participation in preventive health practices such as a Pap test may be better defined as a problem in education rather than community service access. The educator's task is formidable. It has been demonstrated that for selected situations approximately 10 percent of health behavior is related to health knowledge

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*Pap test here refers to the Papanicolaou test for cervical cancer.

(Dowell, 1969). Regardless of the fact that cancer is perceived to be serious and early detection is seen as effective, a majority (63%) of women in this study population did not place the Pap test as a health maintenance behavior high enough among their personal priorities to go and have a Pap smear made during the past fifteen months. Educational programs may, therefore, have to emphasize motivation as much or more than knowledge.

Heart Disease and High Blood Pressure

Heart disease is the leading cause of death in the United States and Pennsylvania.[5] It is not surprising to find, therefore, among the Elkland Borough residents interviewed for this study, a high level of concern about this disease. Its seriousness as an illness is reflected in that 81 percent of these persons saw it as serious or very serious. Twenty-five percent felt they were likely to have heart disease.

The frequency of occurrence of heart disease is associated with what are called risk factors such as high blood pressure, overweight and lack of regular physical exercise. Among a national sample of white adults aged 18 to 74 years the prevalence rate for significantly high blood pressure was reported to be (Roberts, 1975:19):

Sex	Age	Rate Per 100 Persons
Men	18-44	21
	45-59	45
	60-74	39
Women	18-44	11
	45-59	29
	60-74	36

Respondents living in Elkland Borough reported high blood pressure rates of 29 and 21 per 100 for males and females respectively (Table 5). In addition, those persons reporting normal blood pressure were asked about having their blood pressure checked (Table 6). While all these persons reported having their blood pressure checked at some time in the past, a lower percentage, 84 percent, reported doing so in the past 15 months. In 1974 only 53 percent of these persons had reported a blood pressure check in the 12 months prior to the interview. Persons in the more susceptible age categories (45 and over) have slightly higher rates of checks than do those in the 18-44 category.

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[5]While the heart disease mortality rate in Pennsylvania in 1974 was 425 per 100,000 mid-year population, the cancer (malignant neoplasms) mortality rate for the same year was 198. By comparison, the mortality rates for cerebrovascular disease and accidents were 101 and 40 respectively (Natality and Mortality Statistics, 1974:61). For further comparison see Jurkat (1974).

Table 5. Respondents' Self-Reported Blood Pressure
1976 Elkland Borough Preventive Health
Educational Needs Inventory (N=57)

	Percentage
I do have high blood pressure...	23
I do not have high blood pressure...	77
Total	100

Not answering was 1 person.

Table 6. Year of Most Recent Blood Pressure Check for Persons Reporting Normal Blood Pressure
1976 Elkland Borough Preventive Health
Educational Needs Inventory (N=43)*

Year	Percentage
1975 or 76	84
1974	9
1973	0
1972 and before	7
Total	100

*Excludes 14 cases reporting high blood pressure or not able to recall.

Eighty-six percent of the respondents reported having their blood pressure checked while visiting a doctor's office (TableB 7). Since 79 percent of all persons interviewed had visited a physician in the past year for either acute or preventive health reasons, it does not seem reasonable to try to increase the blood pressure checking rate by encouraging a more uniform application of this practice at such times.

Table 7. Location at which Blood Pressure was Checked for Those Persons Reporting Normal Blood Pressure 1976 Elkland Borough Preventive Health Educational Needs Inventory (N=43)*

Location	Percentage
Individual chechup or physical examination	70
While being treated for an illness or injury	16
Screening Program	9
Other	5
Total	100

*Excludes 14 cases reporting high blood pressure or not able to recall.

The potential for acceptance of treatment of high blood pressure may be high once it is diagnosed. Nearly all persons interviewed (95 percent) felt that high blood pressure can be reduced and were aware of one or more ways in which this could be accomplished. One may speculate, nevertheless, that the actual treatment regimen involving daily medication may involve considerable problems. Instituting a practice to the level of a habit clearly depends on more than knowing that the medication, once taken, has the desired effect.

Heart Disease and Overweight

While this study did not include physiological measures of overweight or obesity, it did inquire into practices and feelings about diet and weight control. A little more than two-fifths of these persons reported never or only occasionally consciously observing dietary rules (Table 8). More women (54%) than men (14%) responded "never" or "occasionally" to the statement "I am careful about what kinds of food I eat."

Table 8. Eating Habits and Dieting
1976 Elkland Borough Preventive Health
Educational Needs Inventory (N=57)

	Never or Occasionally	Uncertain	Usually or Always	Total
	(Read across for 100 percent)			
Careful Eater (1)	44	3	53	100
Regulate Diet (2)	44	2	54	100

(1) "I am careful about how much I eat."

(2) "I am careful about what kinds of food I eat."

In addition, respondents evaluated the degree of difficulty they had in regulating their diet (table 9). Nineteen percent of the respondents felt that dietary regulation was somewhat or extremely difficult (21 percent for men and 19 percent for women).

Table 9. Difficulty for Regulating Diet and Getting Physical Exercise*
1976 Elkland Borough Preventive Health
Educational Needs Inventory (N=57)

	Not Difficult at All	A Little Difficult	Somewhat or Extremely Difficult	Total
	(Read across for 100 percent)			
Diet (1)	58	23	19	100
Exercise (2)	81	13	6	100

*"How difficult would it be for you to do each of these:
(1) regulate the amount of food you eat?"
(2) get regular physical exercise?"

Not answering were 0 and 3 persons respectively for each activity.

The results of a program for detecting health problems among adults living in rural areas of Pennsylvania show that obesity is the most important problem among persons screened (Pa. Dept. Agric.:6). The facts obtained by the present study suggest two

conclusions. First, if the incidence of obesity among these men and women is at all similar to the population in the health problems screening program, there surely is an excessive degree of risk of heart disease being borne by the respondents. Second, while a sizeable majority of respondents may already be following recommended dietary practices to attain or maintain desirable weight levels, a significant minority of persons appear to feel their diet is not of concern to them.

These findings may indicate that the relationship between heart disease and obesity is not as well known or understood as that between high blood pressure and heart disease.

Other Regular Health Maintenance Practices

The persons interviewed were also asked if there were things they did regularly which they felt helped them improve or maintain their health. Three out of ten of the respondents replied "No" to this question. Of those replying "Yes" (41 persons), 81 percent named exercise and/or dieting as preventive health measures that they practiced (Table 10). A sizable portion of the sample either does not practice preventive health maintenance or does not recognize things they do as conducive to health maintenance.

Programs to increase persons' awareness of the need for regular health maintenance practices could emphasize the significance of (1) proper exercise, (2) diets that reduce the occurance of overweight, (3) periodic examinations and tests by qualified professionals and (4) the appropriate therapeutic use of medications.

Table 10. Regular Health Maintenance Practices 1976 Elkland Borough Preventive Health Educational Needs Inventory (N=57)*

Type of Practice	Percent Practicing
Exercise	81
Diet	76
Rest	63
Medication	22
Professional Service	2

*Of the fifty-seven persons interviewed sixteen persons indicated that there was not anything they did regularly which they felt improved or maintained their health.

Medical Services

Although availability of medical services was not central to the question of assessing the preventive health education needs of the rural population in Elkland Borough, the topic is of sufficiently broad interest to be studied and discussed. Ninety-one percent of those responding said that they could get an appointment for an acute care visit with a doctor in less than a day. Eighty-two percent said that they would have to wait less than a week for a preventive care appointment.

Three out of four of those interviewed are aware of the general medical services and general dental services available at Cowanesque Valley Family Health Center. In contrast to this, however, only 5 percent of the sample were aware that house calls by health associates and health education were also services offered by the Center. Only half of the sample were aware of the Center's emergency room services.

One indication of access to medical services is the response to the question "During the past year has there ever been a time when you needed a doctor but were unable to see one?" Eighty-eight percent of those interviewed replied "No" to this question. Another indication of access to medical services is the distance that persons have to travel to get medical services and the amount of time they spend waiting to be examined by health personnel. While many persons (68 percent) are within 15 minutes traveling time of their doctor's office or health center, there is a sizable minority who have to go further. Also, seventeen percent of the respondents report that they usually have to wait more than 30 minutes to see a doctor or health associate once they get to the office or health center.

These results concerning access to doctors can be compared with the results of a national survey (Aday and Andersen, 1975: 19-28). While 68 percent of those interviewed in the present survey were within 15 minutes travel time from their doctor's office, 50 percent of the national sample and only 44 percent of the rural nonfarm in that sample were that close to their regular source of medical care. In terms of the waiting time at the doctor's office those interviewed had to wait for a shorter period of time than those in the national sample.

On a slightly different issue, respondents assessed their probable use of allied health personnel (Table 11). Perhaps of greatest interest in this era of the mid-level practitioner (medical associate, physician's assistant, nurse practitioner) is the fact that 78 percent of those interviewed indicated a willingness to consider treatment by these persons. Sixty-four percent of the respondents (N=36) said that they had heard of the health associates at the Cowanesque Valley Family Health Center. Of these, 89 percent said that they would accept the services of one of these persons either for a complete physical examination or for acute care.

Table 11. Rating on Attitudes Toward Allied Medical Personnel
1976 Elkland Borough Preventive Healthth Educational Needs Inventory (N=57)
Response to question "I would accept medical help from a physician's assistant such as a medical associate, nurse practitioner, Medex, or family health specialist, working under the direct supervision of a doctor."

Response	Percentage
Always	22
Usually	32
Occasionally	24
Never	15
Uncertain	7
Total	100

Number not answering, 3.

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